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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,615	12/18/2000	Sheldon Schultz	2003-0001.20	1773

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EXAMINER	
LAM, ANN Y	

ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/740,615	SCHULTZ ET AL.	
	Examiner	Art Unit	
	Ann Y. Lam	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *July 29, 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-26,28 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-26,28 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/29/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed July 29, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein (regarding the non-patent literature publication) has not been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 26 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26, lines 3-5, lists a Markush group, but uses "or" in line 4, in addition to "and" in line 5. It is unclear as to whether the limitations after the word "or" in line 4 are of the Markush group. (Applicant should use the word "and" in a Markush group.)

Similarly, claim 28, lines 3-6, lists types of values, but uses "or" in lines 4 and 5, and "and" in line 5. It is unclear as to whether or not these types of values are being referred to in the alternative.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(e) the invention was described in (1) an application for
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 19-26 and 28-29 are rejected under 35 U.S.C. 102(e) as being anticipated by King et al., 5,633,724.

The King et al. reference discloses an apparatus comprising:

an optical light source (see column 14, line 20) for illuminating a field having a plurality of plasmon resonant entities (PREs),

an optical detector (e.g., a video camera, 208a, see column 6, lines 13-20) for detecting a spectral emission characteristics of individual PREs and other light scattering entities in the field, where said optical light source and detector are designed to allow detecting the spectral emission characteristics of PREs and other light scattering entities in the field at each of a plurality of different spectral wavelengths (a video camera captures spectral emission characteristics of PRE's, e.g., color)

an image processor (122, see column 5, lines 58-59) operatively connected to the detector for constructing a computer image of the positions (see column 4, lines 52-55 and column 5, lines 53-60, and column 6, lines 13-15) and values (see column 6, line 60 – column 7, lines 22) of the spectral emission characteristic of individual PREs and other light-scattering entities in the field at each of said plurality of spectral wavelengths,

discriminator means (e.g., video camera, 208a, col. 6, lines 13-20) for discriminating PRE's with a selected spectral signature from other light-scattering entities in the computer image, based on a comparison of a selected spectral characteristic of PREs and other light-scattering entities in the field determined over said different spectral wavelengths,

and output means (122, see column 5, line 58, and column 6, lines 13-15) for displaying information about the field based on the information about the selected PREs.

As to claim 20, the light source includes a bright field/dark field lens (see column 9, line 31, and column 15, line 5.)

As to claim 21, the light source includes means for illuminating at a plurality of different wavelengths (see column 12, line 2.)

As to claim 22, the detector is a two-dimensional photodetector array (208a, see column 6, line 8-9) capable of detecting a spectral emission characteristic simultaneously from a plurality of illuminated PREs.

As to claim 23, the detector includes means (e.g., video cameria, 208a, col. 6, lines 13-20) for spectrally separating light emitted from the PREs into said plurality of

different spectral wavelengths, and said image processor operates to form a computer image of the positions (see column 4, lines 52-55 and column 5, lines 53-60, and column 6, lines 13-15) and values (see column 6, line 60 – column 7, lines 22) of the emission spectral characteristic of individual PREs and other light-scattering entities.

As to claim 24, the optical detector includes a two-dimensional array of optical fibers (450, see column 14, line 20) whose output is aligned so as to constitute a line source that is sent into a grating or prism (104see column 5, line 6), and a two-dimensional detector array (208a, see column 6, line 8-9).

As to claim 25, there is a means for moving the target in an x-y plane (see column 10, line 6-7.)

As to claim 26, the image processor operates to construct an image of PRE positions (see column 4, lines 52-55 and column 5, lines 53-60, and column 6, lines 13-15) and peak intensity (see column 4, lines 52-55 and column 5, lines 53-60, and column 6, lines 13-15)

As to claim 27, the image processor operates to construct an image of PRE positions (see column 4, lines 52-55 and column 5, lines 53-60, and column 6, lines 13-15) and fluorescence emission spectrum or Raman spectrum (see column 6, lines 42-50.)

As to claim 28, the discriminator means includes means for discriminating PREs based on detected values of peak intensity (see column 4, lines 40-42, column 4, line 66 – column 5, line 4, and column 6, line 62 – column 7, line 8.)

As to claim 29, the discriminating means discriminates for a selected type of PRE, or those PREs which are interacting with one another and those which are not (see column 4, lines 40-42, column 4, line 66 – column 5, line 4, and column 6, line 62 – column 7, line 8.)

Response to Arguments

Applicant's arguments filed July 29, 2005 have been fully considered but they are not persuasive.

Applicant argues on pages 3 to 4 that King et al. has no teaching related to comparing images from different light-scattering entities and that a video camera by itself is unable to make a comparison of a selected spectral characteristic of PREs and other light-scattering entities in the field. Applicant further argues that King et al. provides no teaching related to the processing of the image data that would suggest a comparison of selected spectral characteristics of PREs and other light-scattering entities in the field. Applicant further asserts that it is well-established in the case law that the mere disclosure in the prior art of a computer does not anticipate a computer for carrying out a specified function if the prior art does not also recognize that specified function. Applicant argues that there is no teaching in King et al. that the computer therein is designed for discriminating PREs from other light scattering entities in the computer image based on a comparison of selected spectral characteristics of PREs and other light-scattering entities in the field.

This is not persuasive because King et al. specifically teaches that the optical signal is detected and the resulting pattern of light and dark pixels may be analyzed by a computer appropriate for analyzing such patterns (col. 4, lines 53-55.) King et al. also teaches that the different frequencies and light intensities may be utilized to result in the maximum optical signal from the molecular tags, and in such a way that the evanescent field can excite only some of the pixels of the array (col. 5, lines 30-34). King teaches that a computer is connected to the detection system for collecting and analyzing the data generated by the detection system (col. 5, lines 58-60.) Thus, King et al. teaches a computer for discriminating PREs from other light scattering entities in the computer image based on a comparison of selected spectral characteristics of PREs and other light-scattering entities in the field. Alternatively, the video camera is the discriminating means (as stated in the Office action), because it discriminates PREs from other light scattering entities.

Applicant also argues on page 4 that as to claim 20 King et al. does not teach that the lenses could be bright field/dark field lenses. Applicant argues that the lens would not necessarily be a bright field/dark field lens, and that King et al. teaches total internal reflection (TIR) for evanescent wave excitation for illuminating the light-scattering entities, which is an alternative method to bright field/dark field illumination. This is not persuasive because a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art

structure is capable of performing the intended use, then it meets the claim. In this case, the lenses are capable of performing the intended use.

Applicant also argues on page 4 that as to claim 26 King et al. does not teach an image processor that is capable of constructing an image of PRE peak intensity. Applicant argues that the King et al. apparatus is not capable of constructing the spectral emission curve of PRE emission intensity vs. illuminating wavelength a shown in Applicant's specification. The Office notes that this capability is not claimed in claim 26 and is not read into the claims (claim 26 only recites that "said image processor operates to construct an image of PRE positions and....values of a spectral characteristic" such as peak intensity....) While the claims are read in light of the specification, the disclosure in the specification are not read into the claims. (The Office also notes that the rejection under 112, second paragraph for vagueness has not been addressed by Applicant.)

Applicant also argues on page 4 that to construct a spectral emission curve, the light source would be required to illuminate the PREs over a continuous range of frequencies. Applicant argues that the King et al. device can at best illuminate only at a discrete number of wavelengths, and would be unable to establish the wavelength at which the peak intensity is achieved. This is not persuasive because, as indicated above, claim 26 does not require that the device be able to construct a spectral emission curve. Also Applicant has not claimed a particular PRE, and therefore the King et al. device only needs to be capable of detecting the peak intensity of any PRE of choice in order to anticipate Applicant's claim.

Applicant also argues on page 4 that as to claim 28 the King et al. reference does not teach an image processor that is capable of constructing an image of PRE peak intensity. Applicant argues that the portions of the King et al. reference that the Examiner cites specifically state that the optical signal detected indicates only the "presence or absence" of the target substance. This is not persuasive because the video camera disclosed by King et al. is capable of discriminating PREs based on peak intensity. (Claim 28 also recites peak position as an alternative to peak intensity. The video camera is capable of discriminating PREs based on peak position.) Also, King et al. teaches that the computer is capable of analyzing the pattern of light and dark pixels from the optical signals (col. 4, lines 53-55) and thus can alternatively be the discriminating means.

Applicant also argues on page 5 that as to claim 29 the King et al. apparatus teaches only to look for the "presence" of an entity and is unable to discriminate for a selected type of PRE, or those PREs which are interacting with one another and those which are not. Applicant argues that the King et al. reference in col. 7, line 5 is only concerned with determining the presence or absence of entities and thus the reference includes no teaching of discriminating PREs based on this characteristic. This is not persuasive because the King et al. device is capable of discriminating for a selected type of PRE because, for example, King et al. teaches that the "light beam is provided with the correct frequency, temporal, and intensity properties to result in the maximum optical signal from the molecular tags, and in such a way that the evanescent field excites one, some or all of the pixels of the array."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann Y. Lam whose telephone number is 571-272-0822. The examiner can normally be reached on M-Sat 11-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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10/12/05